DOCUMENT RESUME

ED 400 981 PS 024 679

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TITLE	Brothers and Sisters in Middle Childhood and Early Adolescence: Continuity and Change in Individual Differences.
PUB DATE	96
NOTE	17p.; In: Sibling Relationships: Their Causes and Consequences; see PS 024 677.
PUB TYPE	Reports - Research/Technical (143) -- Journal Articles (080)
JOURNAL CIT	Advances in Applied Developmental Psychology; v10 p31-46 1996
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	Adolescents; *Age Differences; Birth Order; *Context Effect; Family Attitudes; Family Influence; Family Role; *Individual Differences; Preadolescents; Sex Differences; Sex Role; *Sibling Relationship; Siblings; Socioeconomic Influences
IDENTIFIERS	*Sibling Attitudes; *Sibling Rivalry

ABSTRACT

The Cambridge Sibling Study sought to investigate the structure of sibling relationship changes as children grow up, and the patterns of individual differences in these relationships in middle childhood and adolescence. It followed a group of siblings from 43 families from the preschool period through middle childhood and early adolescence. Four specific areas concerning the sibling relationship were focused upon: (1) stability in the quality of sibling relationships; (2) significant life events and their association with changes in the relationships; (3) changing significance of socioeconomic status and gender as the children reached adolescence; and (4) family members' views on important contributors to change. The study found that there was considerable stability in the participants' behavior and feelings toward their siblings, particularly for the older sibling. Siblings were found to become closer to one another and more supportive during life events with negative impacts. Gender of siblings became more important in the sibling relationship by the age 12 or 13, as did socioeconomic status of the family. (Contains 35 references.) (SD)

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Brothers and Sisters in Middle Childhood and Early Adolescence: Continuity and Change in Individual Differences*

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The question of why some brothers and sisters get along well, and others dislike each other and continually fight, looms large for parents and clinicians, whether the children are preschoolers, of school age, or adolescents. Individual differences in sibling relationships are marked among children of all ages, and they are of real social and practical importance. For example, we know from Patterson's (1986) work that siblings play a shaping role in the development of aggressive behavior. Affectionate sibling relationships also can provide real support in the face of family conflict (Jenkins, 1992), and can foster the growth of social understanding (Dunn, Brown, Slomkowski, Tesla, & Youngblade, 1991). Until quite recently the focus of most sibling research was on the early childhood period, and much has been learned about the sources of influence on the quality of sibling relationships among young children (for reviews, see Boer & Dunn, 1992; Dunn & McGuire, 1992). In contrast, relatively little was known either about how the structure of sibling relationships in general changes as children grow up

*The Cambridge Sibling Study was supported by the Medical Research Council of Great Britain, and by a grant from NIMH (MH-46535).

PS 02-679

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or about what factors are associated with these notable individual differences in the relationship in middle childhood and adolescence.

More recently there has been a welcome increase in studies of siblings in middle childhood and adolescence (e.g., Buhrmester, 1990, 1992). However, it is notable that, with the exception of the recent studies of Brody and his colleagues (Brody, Stoneman, & McCoy, 1992; Brody, Stoneman, McCoy, & Forehand, 1992), most of this research is cross-sectional in design and is concerned with normative changes in the structure and nature of the sibling relationship, rather than with individual differences. Changes in the balance of power between older and younger siblings—with an increase in more egalitarian relations during middle childhood—have been described (Buhrmester, 1992; Buhrmester & Furman, 1990; Vandell, Minnett, & Santrock, 1987). Increases in positive emotional tone and conflict between 8 and 11 were described by Vandell and her colleagues, whereas Buhrmester and colleagues reported a decline in companionship between 8 and 17 years and a decrease in emotional intensity.

Although this research is illuminating in terms of the broad developmental changes in the sibling relationship that take place as children undergo the developmental changes of middle childhood, it cannot begin to answer questions concerning the patterns of individual differences in sibling relationships over this time period. How far are such differences part of a pattern that has continued from early childhood? Do new factors become important as sources of influence on differences in siblings' relationships as the children reach middle childhood and early adolescence? This is a period that includes major changes in children's social and emotional lives, with the transitions of school and the formation of important peer relationships. Do these changes influence children's intimate relationships with their siblings?

We might well predict that there would be discontinuities in individual differences in the relationship over this period, in view of the changes in the structure of the relationship revealed by the cross-sectional research and the major changes in children's lives over this period. Starting and changing school can, for example, be a stressful experience for children (Dunn, 1988), and it is possible that children who find school experiences difficult may "bring their problems home" and become more irritable and difficult with their siblings. In addition to the norma-

tive life events of this period, such as starting school, for many children this period may entail major changes in family life such as parental separation, house moves, and parental unemployment. These changes may well influence changes in family relationships (Dunn, 1988). We know, for instance, that hostility in sibling relationships increases following parental divorce (e.g., Hetherington, 1988; MacKinnon, 1989). It is also quite possible that the developmental changes in children during this period, such as their growing understanding of others, their ability to engage in intimate self-disclosure, and their new social relationships outside the family, may also be linked to new patterns of individual differences.

In contrast, other arguments can be mounted to predict that we would find considerable continuity in the quality of sibling relationships during this period. It is known, for instance, that the temperaments of siblings and the quality of their relationships with their parents are important sources of influence on the relationship during the preschool period (Brody, Stoneman, & Burke, 1987; Munn & Dunn, 1989), among 4- to 7-year-olds (Stocker, Dunn, & Plomin, 1989), and indeed in middle childhood (Brody, Stoneman, & McCoy, 1992). We know, too, that patterns of family cohesion and emotional quality are linked to differences in sibling relationships (Brody & Stoneman, 1987; Brody, Stoneman, McCoy, & Forehand, 1992). Continuity in temperament, family emotional patterns, or differential parental behavior might all contribute to stability in individual differences in sibling relationships between early childhood and adolescence.

To answer the questions about the patterns of individual differences in the relationships, and the possible changes in factors that impact on the relationships, the most appropriate research strategies involve longitudinal studies. In this chapter I discuss the findings from a recent study in which a group of siblings was followed from the preschool period through middle childhood and early adolescence (Dunn, Slomkowski, & Beardsall, 1994). In the study a range of issues concerned with the relations between family relationships and sociocognitive development over this time period were investigated. Here my focus is on four themes concerning the sibling relationship. The first is the issue of stability in the quality of sibling relationships over this period; the second and third concern factors associated with changes in the relationships over this period, specifically the significance of life events and the changing significance of socioeconomic status and gender as the children

reached early adolescence. Finally, the issue of what the family members themselves view as important contributors to change are discussed.

THE CAMBRIDGE SIBLING STUDY

The first visits to the 43 families participating in the study were made when the second-born children were 18 months old, and a series of observations and interviews with the mothers were made during the preschool period. During the second phase of the study, the families were revisited during the middle childhood period and early adolescence of the siblings; mothers and siblings were interviewed, and a variety of assessments were conducted. At this stage, 40 families were able to continue to participate (two families had emigrated, and one family dropped out). Full data on the sibling relationship were available for 39 families, and it is these data that are discussed in this chapter. Figure 2.1 gives an outline of the time points and focus of measurements on the relationship.

	Time 1	Time 2	Time 3	Time 4
Child Age (Years)	YS[1]:3 OS[1]:5–6	YS:6 OS:8–9	YS:8 OS:10–11	YS:10 OS:12–13
Sibling Relationship	a) Maternal Interview b) Observations	Maternal Interview	Maternal Interview	Maternal Interview Child Interview
Life Events		Maternal Interview	Maternal Interview	Maternal Interview Child Interview

[1]YS = Younger Sibling
OS = Older Sibling

FIGURE 2.1 Outline of visits and procedures.

The Families Studied

The study was conducted in Cambridge, England. The families, who were initially recruited from advertisements in the local newspapers and through the help of Health Visitors, came from the town of Cambridge and surrounding villages. All were Caucasian. The social class background, in terms of the Registrar General's (1973) classification of the occupation of the siblings' fathers, was as follows for the 39 families who were followed up till the last time point and for whom the measures on the sibling relationship were complete: I/II (professional/managerial) for 24 families, III (white collar) for 4 families, III (skilled manual) for 8 families, and IV/V unskilled manual for 3 families.

The age gap between the siblings was on average 26 months; thus the older siblings were on average 5 years old at time 1, and 8, 10, and 12 years old on average at the later time points. The design of the study enabled us to study the second-born children at the same ages that we had studied their older siblings as 8- and 10-year-olds; this makes it possible for us to begin to distinguish the significance of birth order and developmental stage. There were 9-girl–girl pairs, 8 boy–boy pairs, 11 girl–boy pairs, and 12 boy–girl pairs.

Procedures and Measures

The findings described concern the measures of sibling relationship from time 1 (when the second-born children were 36 months old and older siblings on average were 5 years old) and from times 2, 3, and 4. These measures are considered in relation to assessments of the life events that the families experienced, to the mothers' experience of stress and daily hassles, to the children's gender, and to the families' socioeconomic status. At the last time point, when the second-born children were 10½ and their older siblings were 12 to 13 years old, the siblings and their mothers each took part in an open-ended interview (alone) in which they were asked about their own views on the patterns of change and continuity in the sibling relationship. In view of the space constraints, I simply refer to the measures here and give references to sources where details of their design, validity, and reliability can be found.

Measures of sibling relationship. The *Maternal Interview Concerning the Sibling Relationship* (Stocker et al., 1989) (times 1, 2, 3, 4) has been employed in three different longitudinal studies; it includes 17 questions concerning each child's behavior toward the sibling. From these questions, scales are derived by principal components analyses; these reflect a positive and a negative dimension of the sibling relationship.

Observational measures of sibling interaction from unstructured home observations (Dunn & Munn, 1985, 1986a, 1986b, 1987) (time 1) were also used. From the observational record and transcript of the verbal interaction during the observation, two aggregate measures of sibling interaction are derived, one of positive and one of negative behavior toward the sibling.

Another measure, the Sibling Relationship Interview (SRI; Stocker & McHale, 1992) (time 4) was also used. From this 21 item interview with each child, in which the child uses a 1–5 scale to rate the frequency with which various feelings and behaviors occur, 3 scales are derived, namely, *warmth/affection*, *conflict*, and *rivalry*; an *intimacy* subscale was also included (McGuire & McHale, 1993, adapted from a measure developed by Blyth, Hill, & Thiel, 1982).

Finally, a retrospective, open-ended interview with mothers and siblings concerning the sibling relationship (time 4) focused on recall of changes in the sibling relationship.

Measures of Life Events. The maternal interview (times 2, 3, 4) was based on a Life Events Schedule (see Beardsall & Dunn, 1992, for details), which was based on the Newcastle Child and Family Recent Life Events Schedule (Goodyer, Kolvin, & Gatzanis, 1985; see also Dunn et al., 1994). The Child interview (time 4): Goodyer and Secher's (1992) Recent Life Events and Difficulties Schedule for Young Persons (see Dunn et al., in press) was also used, as well as Parenting Daily Hassles (PDH). Crnic and Greenberg's (1990) PDH scale measures parental perceptions about the minor daily hassles associated with parenting (see also Crnic & Booth, 1991).

Measure of Maternal Mood. We also used the Clinical Scale for the Assessment of Irritability (Snaith, Constantopoulos, Jardine, & McGuffin, 1978) (times 2, 3, 4). This self-report instrument has four subscales: Outward irritability, Inward irritability, Anxiety, and Depression.

RESULTS

Stability

To investigate the issue of how far there was stability or discontinuity in patterns of individual differences in the children's relationships with their siblings between the preschool and middle childhood periods, age-to-age correlations in the maternal interview accounts of the sibling relationship were first examined. Second, we analyzed the associations between observational measures of sibling interaction in the preschool period and later interview accounts given by both children and mothers of the relationship at the later time points. Details of these analyses and results are given by Dunn and associates (1994).

The results from the first approach showed that there were significant correlations between age points for both the positive and negative dimensions of the relationships. These correlations increased in size with the children's age and tended to be larger for the positive aspects of the relationship. For example, for the older siblings, correlations between 8 and 12 years were $r(39) = .72$ and .61 for the positive and negative dimensions respectively, $ps < .05$; for the younger siblings, the correlations between 6 and 10 years were $r(39) = .52$ and .31 for positive and negative dimensions, $ps < .05$.

It is interesting to note that for the older siblings, the correlations over the seven years between time 1 when the children were on average 5 years old and time 4 when they were on average 12 to 13 were significant [$r(39) = .49$ and .46 ($ps < .05$) for the positive and negative dimensions, respectively]. However, for the younger siblings, the correlations over the seven years between the 3-year and the 10-year assessment were not significant. This difference in the stability of the relationship quality between older and younger siblings could be related to the difference in the developmental period covered: It is possible that there is greater stability of individual differences once the children are 5 years old. Alternatively, it could be related to their birth order. It is possible, for instance, that mothers have more stable views on their first-born children's behavior to the second-born sibling than vice versa; it is also possible that first-born children have more firmly held and stable feelings about their younger siblings than vice versa. We were able to examine this possibility by comparing the correlations between the ma-

ternal assessments of the first-born at 8 and 10 years (times 2 and 3) and of the second-born at 8 and 10 years (times 3 and 4). The results showed the correlations were comparable in size, indicating that the lack of stability for the younger siblings between times 1 and 4 reflected the developmental period covered rather than the birth order of the children.

The second approach to the study of stability was to examine the associations between the observations made in the preschool period and the interview accounts given seven years later by children and mothers. Two general points were established by these analyses. First, on the issue of stability, some significant correlations between the observations and the later child interview accounts of the relationship were found, supporting the maternal interview results on stability. Second, the results highlighted the importance of the behavior of the *other sibling* during the preschool period to the sibling relationship measures at early adolescence. For instance, younger siblings' observed negative behavior at three years correlated [$r(39) = -.50$ ($p < .05$)] with the older siblings' accounts of their intimacy with their siblings seven years later. The results of this second approach, then, showed that the continuity over time found with the first approach did not simply reflect stability in the perceptions of the mothers, as the correlations in this second strategy cut across different sources of information. Most importantly, the evidence from multiple regression analyses showed that a significant contribution to the variance in the positive aspects of the preadolescents' relationships at time 4 was made by the preschool measures. There was evidence, for instance, that the behavior of the *other sibling* in the preschool period was related to the differences in the preadolescents' accounts of their feelings and behavior toward their siblings seven years later (for details of all these analyses see Dunn et al., 1994).

Although these correlational data provide evidence for continuity in the siblings' behavior and feelings about one another, there were for many sibling pairs changes in their relationship, especially changes in the negative aspects of the relationship. Of the many possible contributors to such changes, we consider here three: the impact of life events, gender, and SES.

Significance of Life Events

The second general issue to be discussed concerns the relation of life events experienced by the children over the years to

the quality of their relationship with one another. The question of whether children's relations with their siblings remain stable in the face of such events has been explored in relation to divorce and marital conflict, but not in relation to other life events. The findings on divorce are not entirely consistent, with some studies indicating an increase in sibling conflict following divorce (Hetherington, 1988) and others reporting that some siblings are significant sources of support for one another (Jenkins, 1992).

The results of our study were consistent in showing that in the face of adversities, the children grew closer together with an increase in friendly, affectionate behavior. The occurrence of life events with negative impact was correlated over time with positive behavior shown toward the sibling and negatively correlated with hostile or unfriendly behavior to the sibling. Thus, maternal reports of negative life events were correlated with the younger siblings' accounts of greater intimacy with the older siblings, and child reports of negative life events were negatively correlated with children's accounts of their feelings of rivalry toward their siblings.

It is important to note that, in this sample, the occurrence of marital separation and divorce was relatively infrequent. Only 8% of the events categorized as moderate to severe in negative impact involved marital problems. It appears that different types of life events may well have different sequelae for children's sibling relationships. It will be important in future work to examine different categories of events separately for their potential impact on children's relationships. In addition to these major life events, we should also study the "daily hassles," or trying events that children undergo on a daily basis, because research has shown that for adults, such perceived minor stresses or "daily hassles" have important deleterious consequences (Kanner, Coyne, Schaefer, & Lazarus, 1981). We know, too, that mothers' experiences of daily hassles are linked to the quality of sibling relationships at the final time point of the study. In families in which mothers reported frequent daily hassles, the children reported less intimacy and warmth with their siblings (for younger siblings, $r(39) = -.44$, $-.49$, for intimacy and warmth, respectively, $ps < .05$; for the older siblings, $r(39) = -.27, -.20$, $ps < .05$). There were also positive correlations between frequency of hassles and mothers' reports of the negative dimension of the relationships between older and younger siblings ($r(39) = .35$ and $.30$ for older and younger siblings, respectively, $ps < .05$).

Given this evidence for associations between maternal expe-

rience of stressful hassles and poorer relations between siblings, it is not surprising that we also found correlations between assessments of maternal irritability and mothers' accounts of the negative dimensions of the relationship ($r(39)$ = .38, .32 for older and younger siblings, respectively). Correlations with the children's own accounts of the relationship were in the same direction, although only 4 out of 32 correlations between measures of maternal mood and children's accounts of their warmth, intimacy, rivalry, and conflict with their siblings were significant at $p < .05$. Maternal outward irritability, for instance, was negatively correlated with siblings' accounts of intimacy ($r(39)$ = –.32 and –.38 for younger and older siblings, respectively, ps < .05) and with younger siblings' accounts of conflicted relations with their siblings ($r(39)$ = .32, $p < .05$).

Changing Significance of Gender and SES

Two other general themes raised by the findings from the study concern the changing significance of the children's gender for the quality of their relationship and the growing significance of the socioeconomic status of the family.

On gender, cross-sectional studies have indicated that by late middle childhood gender differences are apparent in sibling relationships. Buhrmester (1992), for example, reported that by this period, older sisters are more likely than older brothers to be in confiding relationships with their younger siblings. In the Cambridge Sibling Study, gender differences had not been found at an above-chance level in the preschool observations or in the interviews when the children were 6, 8, or 10 years old. However, by time 4, when the older siblings were on average 12 to 13 years old, the first-born boys reported less warmth and intimacy with their younger siblings than did the girls.

By this time point, SES differences were also apparent, although such differences had not been found at earlier time points in the study. By early adolescence, the first-born children from the higher SES families reported more warmth and intimacy with their siblings than the first-borns from the lower SES families. Their mothers, too, gave accounts of the relationships that paralleled these differences: No association between maternal interview accounts of the relationship and SES were found for the earlier time points of the study, but by time 4 lower levels of positive, friendly behavior to the sibling were reported for

the children from the lower SES families. Moreover, great increases in negative behavior toward the sibling between times 2 and 4 were found for the children from the lower SES families.

The interpretation of these differences is, of course, problematic. One possibility is that the adolescents from the higher SES families were more articulate and forthcoming about their affection and closeness with their siblings because they were more at ease with the interviewer. However, the differences in the maternal interview assessments that were apparent by time 4 but not earlier, and the greater increases between times 2 and 4 in these maternal accounts of negative behavior cannot be accounted for by such an explanation.

Another possibility is that there were indeed less warm relationships and more negative feelings between the siblings in some of the lower SES families. Other studies have reported less cohesion among family members from lower SES families by the time that children reach adolescence (Newson & Newson, 1992). The sample in the Cambridge Sibling Study is obviously not ideal for distinguishing between these various possibilities; however, the general message from the results—that by early adolescence the social and economic circumstances of the family are beginning to impact the children's sibling relationships within the family—is one that deserves further research attention.

To What Do the Family Members Attribute Change?

At the last time point of the study (time 4), we interviewed each family member separately to obtain their own views on how the relationship between the siblings had developed over the previous years. These detailed interviews were illuminating in a number of respects, and they clarified and extended the findings on each of the issues outlined earlier.

On the matter of stability and change in the relationship, we asked the siblings and their mothers whether they thought there had been changes in the relationship—and if so, to what did they attribute the changes. Three issues in particular that they raised were of general developmental interest. First, in many of the families negative changes in the relationship between the siblings were attributed by all three family members to the new friendships that the children formed outside the family during middle childhood—particularly after the transition to junior school, which takes place in England around the age

of 8 years. In 29 of the 39 families, friendships were seen as contributing either to increased jealousy or to decreased closeness and warmth between the siblings.

The second point is that this association between new friendships and poorer or more distant relationships between the siblings was especially marked with first-born boys. The lack of warmth and intimacy in the sibling relationship that these boys described was frequently attributed to the ties that the boys had, by 12 or 13 years, formed with a male peer group outside the family; it was especially clear in those families in which the first-born boy had a younger sister.

A third issue that the family members raised concerned the developmental changes in the second-born children. For instance, 31 of the children considered changes in their sibling relationships to be related to increases in the second-born's growing powers of argument and reasoning and his or her increased assertiveness. Similar numbers thought that the development of different interests by the two siblings had led to a cooling or distancing of the relationship. Again, the period of the transition to junior school was the age period that was most frequently cited in relation to these changes.

On the matter of the impact of life events, the interviews with the children and their mothers were also illuminating. The majority of the children described how their siblings had provided support for them in the face of difficulties such as accidents that they had suffered, maternal illness, or problems that they had experienced at school. These comments were unsolicited and were not made in response to direct questions concerning sibling support.

CONCLUSIONS AND FUTURE DIRECTIONS

There was evidence for considerable stability in these children's behavior and feelings toward their siblings over the seven years they were studied, particularly for the older siblings in the period between 5 and 12 to 13 years. However, there were also changes for many dyads in the relative friendliness or hostility between the siblings that the family members reported. In the face of life events with negative impact, for example, the siblings drew closer to one another and showed support.

There were also changes in the factors that were associated with the individual differences in the relationships: Notably, the gender of the siblings became important in accounting for variance by the time that the children reached 12 to 13 years, as did the socioeconomic status of the family. The implication that the social world outside the family becomes more important as an influence on children's intimate relationships within the family is clearly one of importance.

Given the relatively small sample of siblings studied here, we clearly have to be wary of generalizing from these findings until they are replicated in other studies. The results do, however, highlight a number of issues for future research that merit further study.

First, in general terms it will clearly be useful to have more research on siblings during middle childhood and adolescence. The interviews showed that for many children, their relationships with their siblings are important in this period, a source of support or irritation and distress.

Second, some of the issues raised by the findings in this study clearly need to be investigated further. The matter of how friendships and extrafamilial relationships are linked to the development of differences in sibling relationships, for instance, merits more attention. So, too, do the findings on the significance of socioeconomic status. What, for instance, are the social processes within the family that might explain the association between socioeconomic status and the relationship between young adolescent siblings?

Third, there are many developmental questions that were not investigated in this study, but that are centrally important to an understanding of individual differences in sibling relationships. Perhaps the most important of all is the matter of the connections between other family relationships—parent–child and marital—and the sibling relationship. We remain ignorant of how the patterns of mutual influence among these family relationships develop and change as children grow through middle childhood and adolescence. The results described earlier show that the quality of mothers' well-being and experience of stress are importantly linked to differences in siblings' relationships at adolescence, but again we lack information on the social processes implicated. Given the evidence that siblings can be both shapers of aggressive behavior (e.g., Patterson, 1986) and significant sources of comfort and support for siblings faced

with disharmonious parents (Jenkins, 1992), the importance of pursuing these exciting developmental questions with longitudinal research on siblings cannot be questioned.

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